

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION**

In re Flint Water Cases.

Judith E. Levy
United States District Judge

/

This Order Relates To:

Bellwether III Cases

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**OPINION AND ORDER DENYING BELLWETHER III
PLAINTIFFS' MOTION TO COMPREHENSIVELY EXCLUDE
THE NOVEL BIOSOLIDS HYPOTHESIS [2928]**

This opinion addresses the admissibility of the testimony and reports of experts retained in anticipation of the next Flint water jury trial, referred to as Bellwether III, set to begin on October 8, 2024.

Currently before the Court is Bellwether III Plaintiffs' ("Plaintiffs" or "Bellwether III Plaintiffs") Motion to Comprehensively Exclude the Novel Biosolids Hypothesis. ("Motion"). (ECF No. 2928.) Veolia North America, LLC, Veolia North America, Inc., and Veolia Water North America Operating Services, LLC's (collectively, "VNA") opposed

Plaintiffs' motion. (ECF No. 3015.) Plaintiffs replied (ECF No. 3040). For the reasons set forth below, the Motion is denied.

I. Background

Bellwether III Plaintiffs Y.A., E.A., G.B., C.D., R.E., J.N., and J.S. were all minor children at the time of the Flint water crisis. They seek to exclude all testimony about what they call “the Novel Biosolids Hypothesis” (“BH”) and “the underlying methods used to support it.” (ECF No. 2928, PageID.98643.) The BH is presented in two papers: Siddhartha Roy et al., *Lead Release to Potable Water During the Flint, Michigan Water Crisis as Revealed by Routine Biosolids Monitoring Data*, 160 Water Rsch. 475 (2019) (“Roy 2019”); Siddhartha Roy & Marc A. Edwards, *Efficacy of Corrosion Control and Pipe Replacement in Reducing Citywide Lead Exposure During the Flint, MI Water System Recovery*, 6 Env’t Sci. Water Rsch. & Tech. 3024 (2020) (“Roy & Edwards 2020”). These two papers looked at data about biosolids, which is “solid matter derived from sewage, including residential wastewater, when it is treated at wastewater plants,” to “determine past levels of lead release to Flint drinking water.” (ECF No. 3015, PageID.101980.)

The BH is, essentially, that “biosolids monitoring data provides an independent and comprehensive means to estimate water lead release pre-, during and post-Flint Water Crisis.” (ECF No. 2928-2, PageID.98669.) Roy & Edwards 2020 builds on the previous paper and applies their methodology to more recent data. (ECF No. 2928-3, PageID.98680.) VNA’s experts rely on these studies to reach various conclusions about the Flint Water Crisis, including those related to the timing and extent of lead exposure. (ECF No. 2928-11.)

The Court has already decided two rounds of *Daubert* motions in anticipation of the Bellwether I and the Issues Class trials, amounting to seventeen rulings in total. It also considered *Daubert* challenges to experts at the time it certified the Issues Class. *See In re Flint Water Cases*, 558 F. Supp. 3d 459, 523–25 (E.D. Mich. 2021) (deciding two *Daubert* motions out of over a dozen *Daubert* motions VNA filed at the class certification stage). Given the Court’s familiarity with these experts, it ordered the Parties not to repeat arguments already made and instead ordered them to preserve arguments the Court had already

considered by reference to those arguments in earlier filings.¹ (ECF No. 2901, PageID.95084.)

II. Legal Standard

Federal Rule of Evidence 702 governs the admissibility of expert testimony and requires that: (1) the witness must be qualified, (2) the testimony must be relevant, and (3) the testimony must be reliable. Fed. R. Evid. 702; *In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 528–29 (6th Cir. 2008). As the Supreme Court explained in *Daubert v. Merrell Dow Pharmas.*, Rule 702 imposes a “gatekeeping” obligation on the courts to ensure that scientific testimony “is not only relevant, but reliable.” 509 U.S. 579, 589 (1993); *see also Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 147 (1999).

In *Daubert*, the Supreme Court provided a non-exclusive list of factors courts may consider when evaluating reliability: (1) whether the theory or technique at the basis of the opinion is testable or has been tested, (2) whether it has been published and subjected to peer review, (3) what the known error rates are and whether there are standards

¹ The Court has also already ruled on five *Daubert* motions related to Bellwether III. (See ECF Nos. 2959, 3007, 3034.)

controlling the technique's operation, and (4) whether the theory or technique is generally accepted. *Daubert*, 509 U.S. at 593; *see also In re Scrap Metal*, 527 F.3d at 529 (listing same factors). Not every factor needs to be present in every instance, and courts may adapt them as appropriate for the facts of an individual case. *Kumho*, 526 U.S. at 150.

“Rejection of expert testimony is the exception, rather than the rule.” *United States v. LaVictor*, 848 F.3d 428, 442 (6th Cir. 2017) (quoting *In re Scrap Metal*, 527 F.3d at 529–30)). The burden is on the proponent of the testimony to show by a “preponderance of proof” that the proffered expert meets the standards of Rule 702 as interpreted by *Daubert*. *Pride v. BIC Corp.*, 218 F.3d 566, 578 (6th Cir. 2000) (quoting *Daubert*, 509 U.S. at 592).

III. Analysis

Plaintiffs argue that the BH should be excluded as unreliable. They also argue that there is no way for VNA to permissibly present the BH through its expert witnesses.

A. Reliability

Plaintiffs argue that the Court should exclude the BH as unreliable under *Daubert* and Rule 702. They assert that the BH is based on

unreliable methodological choices, it involves an approach that is not generally accepted and that involves data manipulation, and it is based on insufficient data. VNA responds to each of these arguments, in addition to arguing that the Court should reject Plaintiffs' arguments, because the studies that propose the BH are peer-reviewed publications.

i. Peer-Reviewed Publication

In response to Plaintiffs' motion, VNA asserts that “[t]he fact that the biosolids study is peer-reviewed, by itself, establishes its admissibility under *Daubert* here.” (ECF No. 3015, PageID.101987.)

Peer review—including publication in a peer-reviewed journal—is considered in a court's evaluation of evidence under Rule 702 and *Daubert*, because it is a “measure of reliability” indicating that an opinion has been “submitted to the scrutiny of the scientific community.” *United States v. Gissantaner*, 990 F.3d 457, 464 (6th Cir. 2021) (quotation omitted). In *Daubert*, the Court explains that “[t]he fact of publication (or lack thereof) in a peer reviewed journal thus will be a relevant, though not dispositive, consideration in assessing the scientific validity of a particular technique or methodology on which an opinion is premised.” 509 U.S. at 594. Although peer-reviewed publication is “not dispositive”

with respect to reliability, *id.*, it can carry significant weight in demonstrating that an opinion is not “junky” and therefore worthy of exclusion. *Kumho*, 526 U.S. at 159 (Scalia, J., concurring).

As VNA notes, when an opinion is in a peer-reviewed scientific publication, this Court has generally viewed that fact as strongly favoring its reliability. *See, e.g.*, *In re Flint Water Cases*, No. 17-10164, 2021 WL 5631706, at *5 n.6 (E.D. Mich. Dec. 1, 2021) (denying in part VNA’s motion to exclude Dr. Joseph Graziano). That approach is appropriate and is consistent with the Supreme Court and the Sixth Circuit’s instruction. *See Daubert*, 509 U.S. at 594; *Gissantaner*, 990 F.3d at 464. In line with that approach, the Court previously rejected VNA’s attempts to exclude expert testimony in part because it relied upon Roy & Edwards 2020. *In re Flint Water Cases*, No. 16-10444, 2023 WL 6147348, at *4 (E.D. Mich. Sep. 20, 2023) (denying VNA’s motion to exclude Dr. Clifford Weisel).

One of VNA’s experts states that both papers at issue here were published in prestigious peer-reviewed journals, requiring independent review by at least two editors and two independent expert reviewers. Data and methods used are outlined in the papers and available for review and verifying results. The study findings have been publicly presented at a

minimum of 5 conferences and 20 university seminars. A collective audience of more than 1200 professionals, faculty members, and researchers have received and considered this research.

(ECF No. 3015-3, PageID.102014–102015.)

Plaintiffs place great emphasis on the BH’s novelty as significant to the Court’s inquiry and as weighing against admission. (*See, e.g.*, ECF No. 2928, PageID.98642; ECF No. 3040, PageID.102853.) But novelty is an important part of science; the fact that scientific research is new is part of what makes it worth publishing as part of the processing of finding “new” theories to explain various phenomena. *See Daubert*, 509 U.S. at 590. *Daubert* frames its inquiry as being focused on the “standard for determining the admissibility of *novel* scientific evidence at trial.” *Id.* at 585 (emphasis added). Novelty—by itself—does not count for or against reliability.

Plaintiffs are nonetheless correct that publication in a scientific journal is not dispositive with respect to admissibility. *Id.* at 594. Peer-reviewed publication does, however, weigh heavily in favor of admission. *See In re Flint Water Cases*, 2021 WL 5631706, at *5 n.6 (denying in part VNA’s motion to exclude Dr. Joseph Graziano). As a result, for Plaintiffs

to prevail, the other factors under Rule 702 and *Daubert* must strongly favor exclusion.

ii. Methodological Choices

Plaintiffs argue that the BH is based on flawed methods, because it relies on a one-month offset, compares measurements of lead concentration to measurements of lead mass, and uses an “unsupported” weighted average of water-lead levels (“WLLs”). (ECF No. 2928, PageID.98644–98649.) They assert it therefore must be excluded.

a. One-Month Offset

Plaintiffs argue that the BH is supported by a problematic methodological choice to apply a “a ‘one[-]month offset’ between [WLL] data from Virginia Tech’s citywide sampling and biosolid data.” (*Id.* at PageID.98645.) Here, “offset” refers to comparing WLL data from one month to biosolids data from the following month. (ECF No. 2928-2, PageID.98671.) That choice is meant to account for the lag time it takes for lead present in tap water to appear in the data collected from biosolids at the City of Flint wastewater plant. Roy 2019 explains:

A one[-]month offset was used between [WLL data and] metals in biosolids data, to partly account for the two weeks . . . of biosolids retention time . . . in the plant digester and

another few days of activated sludge detention time. For example, water samples collected from homes throughout the month of August 2015 were paired with total lead mass in biosolids early September 2015.

(*Id.*)

Plaintiffs argue that Roy 2019 should have compared WLL data to biosolids data from two months later rather than the following month. (ECF No. 2928, PageID.98646.) This mistake undermines the reliability of the BH, according to Plaintiffs. (*Id.* at PageID.98647.) To support this point, Plaintiffs rely on a website—run in part by researchers who propose the BH—that provides the WLL data from Flint. (*Id.* at PageID.98646 n.8.) On the site, a comment from Siddhartha Roy states that the August 2015 data was “almost all” collected “between Aug 20 and Sep 10.” Siddhartha Roy, Comment to *[Complete Dataset] Lead Results from Tap Water Sampling in Flint, MI*, FLINT WATER STUDY UPDATES (Feb. 1, 2016, 6:59 PM), <https://flintwaterstudy.org/2015/12/complete-dataset-lead-results-in-tap-water-for-271-flint-samples/>. Because WLL data was collected into September—not just in August—Plaintiffs believe Roy 2019 used the wrong offset to account for the lag time required for WLL to be reflected in biosolids lead data. (See ECF No.

2928-4, PageID.98693–98694.) The concern is that if water samples were taken during the same month as the biosolids data was collected (i.e. September), there was not a true one-month offset for those samples.

Both Plaintiffs' and VNA's experts provide declarations on this issue. Plaintiffs' expert, Dr. Madigan, asserts that the timing of the water sampling data relied upon in Roy 2019 and Roy & Edwards 2020 would require a different offset. (*Id.*) VNA, relying on their experts, argues that the timing issue raised by Dr. Madigan relates to only a “handful” of water samples. (ECF No. 3015, PageID.101992; *see also* ECF No. 3015-3, PageID.102019–102020.)

There are open factual questions here. The parties dispute how many samples were taken in September 2015. (ECF No. 3015, PageID.101992–101993; ECF No. 3040, PageID.102855–102856.) Neither party establishes the precise number or timing of samples taken in September 2015.² Further, neither party establishes whether similar issues impact sampling rounds other than the one in August 2015. (See

² One of VNA's experts appears to misstate the timing of the samples taken in September as occurring between “between September 1, 2015, and September 4, 2015,” which differs from Siddhartha Roy's comment on the above-cited website. (ECF No. 3015-3, PageID.102020.)

ECF No. 3040-2, PageID.102871.) These unsettled factual questions do not establish that the arguments raised by Plaintiffs impact the BH's reliability in a significant manner.

Such a dispute is not a basis for exclusion of the BH. It is up to the jury to determine whether the one-month offset utilized in the research about the BH is based on solid factual ground and, if not, whether any weaknesses undermine the basis of the opinions offered by experts who rely upon the BH. *In re Flint Water Cases*, No. 17-10164, 2022 WL 189503, at *2 (E.D. Mich. Jan. 20, 2022) (explaining that factual disputes should not be resolved at the *Daubert* stage even when the factual basis for an expert's opinion is weak).

b. Mass to Concentration Comparison

Plaintiffs further argue that the research related to the BH fails to make "an apples-to-apples comparison of lead in water data and lead in biosolids data." (ECF No. 2928, PageID.98647.) In the studies related to the BH, the biosolids data involves the estimated *mass* of lead and WLL data involves the *concentration* of lead. One of Plaintiffs' experts questions this choice and notes that it is not explained in the published article. (ECF No. 2928-4, PageID.98695.)

To argue that the comparison at issue makes the BH inadmissible, Plaintiffs cite to cases where a court excluded an opinion from an expert who calculated economic loss by comparing insufficiently similar companies, *Loeffel Steel Prods., Inc. v. Delta Brands, Inc.*, 387 F. Supp. 2d 794, 812 (N.D. Ill. 2005), and another where a court excluded an opinion from an expert who compared two different types of data, one of which was unverified and provided by the defendant. *State Farm Fire & Cas. Co. v. Electrolux Home Prods., Inc.*, 980 F. Supp. 2d 1031, 1048–50 (N.D. Ind. 2013). The mass-to-concentration comparisons in these published studies related to the BH, which were not prepared in anticipation of litigation, do not raise the same concerns as the unsupported comparisons in the cases Plaintiffs cite.

In fact, in deposition testimony, Dr. Marc Edwards, one of the researchers who proposed the BH, explains the researchers' decision to use biosolids data involving lead mass rather than using data involving lead concentration. This explanation is responsive to Plaintiffs' citation of the requirement that an expert's methodology must be explicable in "objective terms" and falsifiable "by objective standards." See *Downs v. Perstorp Components, Inc.*, 126 F. Supp. 2d 1090, 1127 (E.D. Tenn. 1999).

Dr. Edwards explains that concentration of lead in biosolids depends on many other factors that would be irrelevant to analyzing the amount of lead in Flint water. (ECF No. 3015-13, PageID.102280–102281 (“you’ve got a lot of stuff going into the sewer that is not lead that varies with time and then you have the lead that’s coming from the -- the plumbing, right, and so what you are trying to do is -- is ignore the noise, which is all of these factors putting more stuff in the water, and get the thing you care about, which is the mass of lead”).)

Plaintiffs disagree. Their expert suggests that some of the results presented in Roy 2019 mitigate the issues with “noise” that Dr. Edwards discusses. (ECF No. 2928-4, PageID.98695–98696 (arguing that other metals and industrial wastewater would be unlikely to create “noise” if concentration of lead in biosolids had been considered rather than mass).) That undermines Dr. Edwards’ justification for the choice to use the mass of lead in biosolids, in Plaintiffs’ expert’s opinion. (*Id.* at PageID.98696.) Plaintiffs’ expert is particularly skeptical of this methodological choice, because he believes this choice impacted the study’s results. (ECF No. 3040-2, PageID.102872–102873.)

While Plaintiffs have presented serious criticisms of the choice to compare mass to concentration in Roy 2019, they have not shown that the BH is based on “subjective belief or unsupported speculation.” *Daubert*, 509 U.S. at 590. They have shown that experts disagree about how well justified the methodology underlying the BH is, but Dr. Edwards’ explanation suffices to demonstrate that the approach was not mere unscientific “guesswork.” *Tamraz v. Lincoln Elec. Co.*, 620 F.3d 665, 671 (6th Cir. 2010). Plaintiffs may certainly challenge this methodological choice when cross-examining any experts that rely upon the BH, but the fact that Plaintiffs’ expert views this comparison as a “curious choice,” (ECF No. 2928-4, PageID.98695), merely creates a “battle of the experts” rather than a basis for exclusion. *Phillips v. Cohen*, 400 F.3d 388, 399 (6th Cir. 2005).

In addition, there are other related disagreements between the parties’ experts that emerge in the multiple declarations attached to the parties’ briefs. Plaintiffs argue that Dr. Edwards’ deposition testimony does not address why he used WLL concentration rather than WLL mass. (ECF No. 3040, PageID.102856.) They also criticize VNA’s experts’ discussion of the significance of the scale used for the data and the

significance of conducting a mass balance. (*Id.* at PageID.102857–102858.) None of these disputes indicates that the researchers who proposed the BH failed to have “good grounds” for their methodological choices. *Daubert*, 509 U.S. at 590. Dr. Edwards provided an explanation for the methodological choice to compare mass to concentration. (ECF No. 3015-13, PageID.102280–102281.) There may be unanswered questions about the approach taken in these studies and VNA’s experts may not have supplied definitive responses to those questions. There may be other—possibly superior—approaches the researchers who propose the BH could have adopted. Competing expert opinions about the best approach to a scientific question do not create a basis for exclusion, however, including with respect to comparison of data, as the Court has previously held. See *In re Flint Water Cases*, No. 16-10444, 2023 WL 6279521, at *5–6 (E.D. Mich. Sep. 26, 2023) (denying in part VNA’s motion to exclude Dr. Daryn Reicherter).

c. Weighted Average of WLLs

Plaintiffs also attack the BH for being based on a weighted average of WLLs that they assert is arbitrary, unexplained, and in tension with the evidence. (ECF No. 2928, PageID.98649.) The WLL data in Roy 2019

was collected throughout Flint five times, starting in August 2015 and ending with a final “water sampling event[]” in August 2017. (ECF No. 2928-2, PageID.98671.) During each sampling event, Flint residents and Virginia Tech researchers took three water draws from various water taps in Flint, which were then analyzed for lead, among other things. (*Id.*) In Roy 2019, these three draws were weighted equally to calculate a representative weighted average for WLLs in Flint at particular times, which was then correlated with the mass of lead in biosolids. (*Id.*)

The researchers who propose the BH offer justifications for their choice to weigh each draw equally. In Roy 2019, the authors explain that they made this choice “to reflect [the] importance of lead release from all three types of water in human exposure (Sandvig et al., 2008) for each Virginia Tech sampling round.” (*Id.*) Roy 2019 does not elaborate on what they mean by “all three types of water in human exposure” or how the cited source supports their approach. In his deposition, however, Dr. Edwards explains that the weighted average was based on an approach adopted by the EPA, as well as being based on research and analysis about the “mechanism” by which lead particles were released from pipes in Flint. (ECF No. 3015-13, PageID.102283 (“weighting each one of those

[draws] equally kind of weighted the likelihood of particle sloughing equally which we think is the mechanism here”.) Plaintiffs are therefore incorrect that this methodological choice is arbitrary or unexplained. While Dr. Edwards acknowledges that researchers might reasonably disagree about appropriate weighting, he provides grounds for weighing each draw equally. (*Id.*)

Plaintiffs also argue that the facts relied upon in Roy 2019 undermine the choice to use an equally weighted average of the three draws. Specifically, Plaintiffs assert that this choice is based on “the unsupported assumption that the second draw usually has the highest lead level.” (ECF No. 2928, PageID.98649.) Even if the relevant assumption is incorrect, the study does not appear to rely on this claim about second draws to justify using an equally weighted average. Roy 2019 includes the comment about second draws in the “Results and discussion” section not the “Experimental methods” section that explains the study’s methodological choices. (ECF No. 2928-2, PageID.98671.) This comment occurs in a paragraph about the correlation between lead and other metals and does not appear to play the role Plaintiffs suggest. (*Id.*) The proposition that lead is highest in second draws does not appear

in the above-cited deposition testimony from Dr. Edwards either. (ECF No. 3015-13, PageID.102283.) The Court therefore rejects Plaintiffs' assertion that this statement about second draws in Roy 2019 is used to justify the use of an equally weighted average.

Plaintiffs' experts also suggest weighing the sample based on volume or weighing it based on which draw had the highest lead levels. (ECF No. 2928-5, PageID.98756–98758.) VNA disputes whether weighing the samples based on volume—or some other factor—would impact the study's results. (*See, e.g.*, ECF No. 3015-3, PageID.102026–102027.) The Court need not decide whether a superior or ideal weighing method might be available, however. *See In re Flint Water Cases*, 2023 WL 6279521, at *5–6 (denying in part VNA's motion to exclude Dr. Daryn Reicherter). What matters is that Plaintiffs are mistaken that weighing the samples equally in these studies is arbitrary, unexplained, and in tension with the evidence in a manner that undermines the reliability of the research. To the extent there are issues with the methodology behind the BH, the alleged flaws are part of a peer-reviewed, published, “intellectually rigorous” study and “affect the weight that [these] opinion[s] [should be] given at trial, but not [their] threshold

admissibility.” *Best v. Lowe’s Home Ctrs., Inc.*, 563 F.3d 171, 182 (6th Cir. 2009).

iii. Data Manipulation and Failure to Employ Generally Accepted Methods

Plaintiffs also argue for exclusion of the BH, asserting the researchers in Roy 2019 and Roy & Edwards 2020 engaged in data manipulation and failed to employ generally accepted scientific methods.

Plaintiffs argue that the BH predicts a certain correlation that is not borne out by the data. (ECF No. 2928, PageID.98650.) This argument is intended to support an accusation of data manipulation. Courts exclude testimony as based on data manipulation when, for instance, models are intentionally chosen with the assistance of counsel and data is subjectively included and excluded “to achieve a desired result.”

Snodgrass v. Ford Motor Co., No. 96-1814, 2002 WL 485688, at *12 (D.N.J. Mar. 28, 2002); *see also In re Onglyza (Saxagliptin) and Kombiglyze XR (Saxagliptin and Metformin) Prods. Liab. Litig.*, No. 5:18-md-2809, 2022 WL 43244, at *18 (E.D. Ky. Jan. 5, 2022).

Plaintiffs have not shown anything like that here. Instead, their expert argues that—given what the BH predicts—WLLs should increase

and decrease alongside lead levels in biosolids. (ECF No. 2928-4, PageID.98701.) However, according to Plaintiffs' expert, the study revealed that a WLL decrease corresponded with an increase in lead levels in biosolids. (*Id.* at PageID.98701–98702.) VNA responds that this lack of correlation is a product of Plaintiffs' expert's failure to offset the data properly. (ECF No. 3015, PageID.101996–101997; *see also* ECF No. 3015-3, PageID.102019.) Insofar as this evidence is merely the product of a disagreement over how to offset data, the Court has already set forth why that disagreement is not a basis for exclusion. Even if Plaintiffs' expert has offered some counterevidence to challenge the BH, nothing here amounts to data manipulation; it goes “to the weight of the evidence, not to its admissibility.” *In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 531 (6th Cir.).

Plaintiffs also make the broad argument that the BH is not based on generally accepted methods. General acceptance is one of the factors outlined in *Daubert*:

“general acceptance” can [] have a bearing on the inquiry. A “reliability assessment does not require, although it does permit, explicit identification of a relevant scientific community and an express determination of a particular degree of acceptance within that community.” *United States*

v. Downing, 753 F.2d, at 1238. See also 3 Weinstein & Berger ¶ 702[03], pp. 702–41 to 702–42. Widespread acceptance can be an important factor in ruling particular evidence admissible, and “a known technique which has been able to attract only minimal support within the community,” Downing, 753 F.2d, at 1238, may properly be viewed with skepticism.

509 U.S. at 594. The Sixth Circuit has explained that “[o]nly when a theory or procedure does not have the acceptance of most of the pertinent scientific community, and in fact a substantial part of the scientific community disfavors the principle or procedure, will it not be generally accepted.” *United States v. Bonds*, 12 F.3d 540, 562 (6th Cir. 1993).

Plaintiffs argue that the BH and the methods supporting it lack general acceptance. (ECF No. 2928, PageID.98651.) Plaintiffs rely on the opinion of their experts to make this argument. (ECF No. 2928-5, PageID.98752 (“neither the methodology itself, nor the novel hypothesis, has been generally accepted in the fields of drinking water engineering nor human exposure science. No governmental agency recommends, endorses, or employs it; and no accredited institution (to my knowledge) teaches it as a valid and accepted method of estimating the amount of lead in drinking water or potential exposure to it.”) A VNA expert asserts, however, that the methodology that supports the BH is “a sound scientific

approach that has been used for identifying other trace contaminants in cities for decades.” (ECF No. 3015-7, PageID.102176.) The BH’s reliance on a novel application of established scientific methods like biosolids metals monitoring and linear regression does not show that a methodology lacks general acceptance.

Beyond presenting this disagreement between experts, Plaintiffs also cite a case where an expert admitted that “there are no peer reviewed standards for the work he performed, and . . . that he did not perform any scientific tests to confirm his conclusions and that he did not evaluate any margin of error.” *Freeport-McMoran Res. Partners Ltd. P'ship v. B-B Paint Corp.*, 56 F.Supp.2d 823, 833 (E.D. Mich. 1999). There are no such admissions on the record here. Plaintiffs’ expert acknowledges that the research behind the BH relies on “some methods that are well accepted, such as methods for quantifying the amount of lead in water and biosolids,” though he objects to the “broader methodology” of using these methods to “characterize lead exposure in drinking water” as being “far from well-established.” (ECF No. 3040-3, PageID.102893.) Plaintiffs may have shown that aspects of the methodology behind the BH are novel and not well-established, but they have not shown that these techniques are

generally disfavored. And there is no “rigid ‘general acceptance’ requirement” for the admission of expert testimony. *Daubert*, 509 U.S. at 588. Plaintiffs’ attempt to apply such a rigid standard here fails.

iv. Insufficient Data

Plaintiffs argue that the BH is not “based on sufficient facts or data,” so it must be excluded. Fed. R. Evid. 702. They argue that the studies related to the BH do not include certain important data, in addition to ignoring inconsistent data.

a. Data Related to Stormwater and Sewer Discharge, Wastewater from Cities Outside Flint, and Industrial Discharge

Plaintiffs assert that the research behind the BH ignores data about stormwater and sewer discharge, including from towns outside Flint that were not directly impacted by the Flint Water Crisis. (ECF No. 2928, PageID.98654.) Their expert asserts that “inclusion of sewage solids from these other cities could have substantially influenced the amount and concentration of lead found in the Flint biosolid samples, especially during periods of heavy rainfall.” (ECF No. 2928-5, PageID.98760.)

They also argue that the studies related to the BH fail to include available data about how much industrial wastewater—as opposed to domestic plumbing—“could have contributed to the lead levels in the biosolids.” (ECF No. 2928, PageID.98655.) Roy 2019 states that “less than 5% of the wastewater is derived from industry,” a claim that is based on an email communication with Robert Case, a City of Flint employee who held a job related to biosolids production. (ECF No. 2928-2, PageID.98670.) Plaintiffs’ expert points to data sources that could have been used to verify this information, which the studies related to the BH did not utilize. (ECF No. 2928-5, PageID.98760.)

VNA asserts that its experts do not believe that stormwater, wastewater from communities outside of Flint, or industrial discharges impact the study’s reliability. (ECF No. 3015, PageID.101997–101998.) Roy 2019 considered stormwater, stating that “stormwater in Flint is not discharged to sewers, reducing the likelihood that surface water runoff or hydrant flushing of water would influence the results.” (ECF No. 2928-2, PageID.98672.) A VNA expert also states that it is unlikely that the communities outside Flint contributed much lead to the biosolids data relied upon in these two studies, because “[n]one of these communities

was known to have excess lead in the relevant time period.”³ (ECF No. 3015-3, PageID.102028.) VNA also asserts that Roy 2019’s reference to 5% of wastewater coming from industrial sources demonstrates adequate investigation of that issue. (ECF No. 3015, PageID.101997.)

To be admissible, expert testimony must be “based on sufficient facts or data.” Fed. R. Evid. 702. The Sixth Circuit instructs:

“Where an expert’s testimony amounts to ‘mere guess or speculation,’ the court should exclude his testimony, but where the opinion has a reasonable factual basis, it should not be excluded.” *United States v. L.E. Cooke Co.*, 991 F.2d 336, 342 (6th Cir. 1993). Rather, the testimony should be admitted, and any remaining challenges merely go to the weight, as opposed to the admissibility, of the expert testimony. *See In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 530 (6th Cir. 2008).

³ The basis for VNA’s expert’s opinion is not entirely clear, as he does not cite anything in support of this statement or in support of his claim that contributions of lead from “satellite communit[ies] were known to the Virginia Tech researchers.” (ECF No. 3015-3, PageID.102028.) Plaintiffs’ expert accuses VNA’s expert of relying on undisclosed insider knowledge in describing what the Virginia Tech researchers behind the BH knew. (ECF No. 3040-3, PageID.102913.) It may be, however, that VNA’s expert is suggesting that nothing like the Flint Water Crisis was occurring in the communities surrounding Flint at the relevant time—a fact the researchers who propose the BH were likely aware of. Given this lack of clarity (and lack of supporting citations), however, the Court will discount VNA’s expert’s arguments on this issue accordingly.

United States v. Ramer, 883 F.3d 659, 680 (6th Cir. 2018). Plaintiffs raise important questions about data that “could” impact how heavily a jury weighs the evidence related to the BH. (ECF No. 2928, PageID.98655; ECF No. 2928-5, PageID.98760.) Yet they do not provide a basis for the Court to conclude that the BH lacks a reasonable factual basis for VNA’s expert witnesses to rely upon in reaching their opinions. These two studies are far from mere guesses or speculation—they consider issues like stormwater and industry discharge, as set forth above. And the studies do not rest on “estimates and assumptions” that render the opinions they contain inadmissible. *Mohney v. USA Hockey, Inc.*, 138 Fed. App’x 804, 809 (6th Cir. 2005). Roy 2019, for instance, relies on data about blood lead levels, metal in biosolids, and metals in water, as well as other data, to establish its conclusions. (ECF No. 2928-2, PageID.98670–98671.) That study considered a variety of evidence to validate its conclusions, as well. (ECF No. 2928-2, PageID.98675 (noting correlations between lead and other “plumbing-related metals” in biosolids data and between biosolids lead and WLLs, as well as other relevant conclusions that support the BH based on data considered in the study.) While Plaintiffs’ arguments reveal a basis for “[v]igorous cross-

examination [and] presentation of contrary evidence,” they do not offer a basis for exclusion. *Daubert*, 509 U.S. at 596.

b. Inconsistent Data

Plaintiffs point to a statement from Dr. Edwards that appears to contradict conclusions that were ultimately published in Roy 2019. (ECF No. 2928, PageID.98656–98657.) They argue that because Dr. Edwards’ statement does not fit with the conclusions reached in the studies related to the BH, the BH must be excluded. (*Id.* at PageID.98657.)

In an email with the subject line “Confidential initial analysis,” sent on October 28, 2017, Dr. Edwards says that “lead levels in the sludge did not really ever rise year on year until Jan[uary] [20]15, and then maybe not significantly until [April 2015 through September 2015]. Then, after switching back, lead content dropped to historical lows.” (ECF No. 2928-9, PageID.98786.) Roy 2019, which Dr. Edwards co-authored, states that most of the increase in lead in biosolids occurred during July to September 2014. (ECF No. 2928-2, PageID.98675.)

VNA points to the fact that the authors of Roy 2019 acknowledge that their views changed as they carried out the study. (*Id.* at PageID.98674 (“The overall biosolids lead data directly contradicts prior

speculation by ourselves and others, that water lead levels and associated exposures, progressively increased during the 18 months of the FWC.”). The email Plaintiffs cite is an initial reaction to data—one where Dr. Edwards explicitly explains that he plans to perform further analysis. (ECF No. 2928-9, PageID.98786.)

It is true that Dr. Edwards’ view has apparently evolved over time. Such a shift differs from a situation where, for instance, an expert’s opinion must be excluded because their report appears to contradict their own previously published studies and other cited research. *United States v. Smallwood*, No. 5:08-CR-38, 2010 WL 4168823, at *5 (W.D. Ky. Oct. 12, 2010). The expert in *Smallwood* departed from established academic findings—including his own—to offer an unsupported opinion as an expert witness in litigation. *Id.* Here, Dr. Edwards ultimately published an analysis that differed from an earlier email that included a preliminary analysis. There is a significant difference between, on the one hand, departing from the published opinions one purports to rely upon in expert testimony and on the other, abandoning a preliminary unpublished opinion while developing the conclusions one eventually publishes in an academic journal. The former raises concerns about an

opinion being “[r]esult-driven analysis,” *In re Onglyza*, 2022 WL 43244, at *18 (citation omitted), while the latter is a normal part of the “process for proposing and refining theoretical explanations about the world that are subject to further testing and refinement.” *Daubert*, 509 U.S. at 590 (emphasis in original) (citing Brief for American Association for the Advancement of Science et al. as *Amici Curiae*). Accordingly, this argument for exclusion of the BH fails.

The *Daubert* analysis ultimately favors admission of this evidence. First, the BH can be and has been tested. *Id.* at 593. Plaintiffs challenge the *way* the BH was tested not *whether* it was tested. *See Bonds*, 12 F.3d at 559. Second, as set forth above, the BH was included in two peer-reviewed published articles. Third, as far as rates of error, *Daubert* 509 U.S. at 594, VNA leans on “the strength of the regression” that supports the BH. (ECF No. 3015, PageID.102000 n.12.) That point is heavily disputed by Plaintiffs. (*See, e.g.*, ECF No. 3040-3, PageID.102896.) It is not appropriate for the Court to settle this dispute about the strength of the regression here and therefore the error-rate factor does not weigh heavily one way or the other. Finally, aspects of the methodology behind the BH are generally accepted and other aspects of that methodology are

novel, but there is not compelling evidence that a substantial part of the scientific community disfavors this methodology. *See Bonds*, 12 F.3d at 562. The fact that few if any of these factors weigh substantially against admission under the “flexible” Rule 702 and *Daubert* inquiry supports rejecting Plaintiffs’ arguments related to reliability. *Daubert*, 509 U.S. at 594. Accordingly, the Court rejects Plaintiffs’ arguments that the BH must be excluded as unreliable.

B. Presenting the BH Through VNA’s Experts

Plaintiffs argue that the Court should bar VNA’s experts from relying on the BH in their testimony, regardless of which experts present it and how. (ECF No. 2928, PageID.98658–98664.) They assert that this argument applies to VNA’s retained experts (Dr. Graham Gagnon, Dr. Brent Finley, Dr. William Bellamy, Dr. Sheldon Masters, and Dr. Michael Greenberg) and one non-retained expert (Dr. Marc Edwards). (*Id.* at PageID.98659–98662.)

Many of Plaintiffs’ arguments depend upon the Court finding the BH unreliable, (*see id.* at PageID.98659–98661), so those arguments fail for the reasons set forth above. Plaintiffs also argue, however, that VNA’s experts “simply parrot[]” conclusions related to the BH and, in some

cases, “did not review or verify the actual data underlying the biosolids study.” (ECF No. 2928, PageID.98661–98665.)

Courts have held that it is impermissible for an expert to simply parrot or act as a conduit for another person’s opinion. *Gould Elecs., Inc. v. Livingston Cnty. Rd. Comm’n*, No. 17-11130, 2020 WL 6793335, at *8–9. (E.D. Mich. Nov. 19, 2020) (excluding the opinion of an engineer whose testimony was wholly based on a non-testifying expert’s analysis and who “did not describe in any significant way the facts or data upon which . . . conclusions rested or testify that those conclusions were the product of reliable principles and methods appropriately applied”). When, for instance, an expert is not qualified to offer an opinion but adopts the conclusions of others, that testimony will be excluded. *Brown v. Teledyne Cont’l Motors, Inc.*, No. 1:06-CV-00026, 2007 WL 838918, at *2–3 (N.D. Ohio Mar. 15, 2007). The Court has set forth:

Experts are indeed not permitted to premise their opinion “entirely” on other experts without undertaking any of the necessary steps to form their own opinion. See, e.g., *In re Welding Fume Prods. Liab. Litig.*, No. 1:03-cv-17000, 2010 WL 7699456, at *63 (N.D. Ohio June 4, 2020). However, experts are permitted to rely on the opinions of other experts and such reliance is common. See *Dura Auto. Sys. of Ind., Inc. v. CTS Corp.*, 285 F.3d 609, 613 (7th Cir. 2002). There is a

difference between such reliance and someone simply testifying in order to vouch for another expert or act as their “spokes[person].” *Id.*

In re Flint Water Cases, No. 16-10444, 2023 WL 6147255, at *3 (E.D. Mich. Sep. 20, 2023) (denying VNA’s motion to exclude Dr. Paolo Gardoni). Plaintiffs are therefore correct that VNA’s experts may not simply regurgitate verbatim the opinions of the researchers who developed and published the BH.

The Court has also explained, however:

But [the] rule [against experts parroting the work of others] does not prohibit reliance on peer-reviewed work to inform one’s own conclusions. Such reliance is part and parcel of the scientific enterprise and therefore permissible. *Best v. Lowe’s Home Ctr’s, Inc.*, 563 F.3d 171, 181 (6th Cir. 2009) (quoting *Kumho*, 526 U.S. at 152) (expert must “employ in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field”).

In re Flint Water Cases, No. 17-10164, 2022 WL 331182, at *3 (E.D. Mich. Feb. 3, 2022) (denying in part VNA’s motion to exclude Dr. John Hoaglund).

An expert can—as a general matter—testify about a peer-reviewed study upon which they rely, but Plaintiffs assert that some of VNA’s

experts did not sufficiently verify the underlying data or analysis in the studies related to the BH. Plaintiffs specifically refer to Dr. Graham Gagnon, Dr. Brent Finley, and Dr. Michael Greenberg. (ECF No. 2928, PageID.98663.)

Dr. Greenberg did not rely on the two articles on the BH in forming his opinions, (ECF No. 2928-12, PageID.98820–98822), nor, according to VNA, does he offer any opinions on these studies. (ECF No. 3015, PageID.102003 n.15; *see also* ECF No. 2928-11.) Accordingly, because he will not be offering any opinions related to or reliant on the BH, Plaintiffs' arguments with respect to him are moot.

Dr. Gagnon and Dr. Finley are the only experts who refer to these two studies and whom Plaintiffs argue did not analyze the two studies about the BH sufficiently. (ECF No. 2928, PageID.98663.)

Dr. Gagnon asserts that he relied on the peer review process in considering studies related to the BH in addition to “scrutiniz[ing] the data and the work that [the authors] did.” (ECF No. 2928-13, PageID.98833.) He testified that he reviewed the data as it was presented in a peer-reviewed publication and not the raw data that formed the basis of the research. (*Id.* at PageID.98848.) Dr. Gagnon also recognizes that

he did not know the extent to which the researchers who propose the BH reviewed documents related to the wastewater plant in Flint. (*Id.* at PageID.98841–98842.) He does devote a section of his report to a detailed discussion of the research that supports the BH. (See ECF No. 2928-11.) Nonetheless, he drew his own inferences and applied his own expertise in relying upon the studies related to the BH. (See *id.* at PageID.98800 (describing certain inferences related to corrosion theory that Dr. Gagnon makes based on the studies related to the BH)).

Dr. Finley acknowledges that he did not review “raw data” related to the two studies involving the BH. (ECF No. 2928-14, PageID.98867.) He states that he did not do “independent analysis” related to many of the objections Plaintiffs raise about the two studies. (See, e.g., *id.* at PageID.98878.) Dr. Finley further admits that he is not an expert in the relationship between biosolids and water lead levels. (*Id.* at PageID.98872.)

It is not entirely clear how extensively Dr. Finley relies upon the BH studies, though he acknowledges that he cites them as relevant to his opinion as to “what happened in 2015,” because the biosolids study discusses water lead levels in Flint over time. (*Id.* at PageID.98870 (“I

don't use the estimated data, water lead level data from Roy and Edwards, the biosolids study. I don't use that to reach my opinions about the plaintiffs in this case.") Dr. Finley's report includes his review of the findings from Roy 2019 and Roy & Edwards 2020, as well as certain deposition testimony from Dr. Edwards. (ECF No. 2928-11, PageID.98805–98807.) This discussion, which considers the relationship between water lead levels and blood lead levels, is included to support his opinion that "tap water consumption did not cause an increase in Flint children['s] BLLs in 2015." (*Id.* at PageID.98805.)

Plaintiffs do not establish that VNA's experts' opinions related to the BH fall below the "level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Kumho*, 526 U.S. at 152. Experts can rely on these two studies to form their own opinions—and such reliance does not require the extensive independent analysis that Plaintiffs suggest. Fed. R. Evid. 703.

There is, however, some ambiguity about whether Dr. Finley parrots opinions from the researchers who propose the BH or whether he is forming an independent opinion based on his own analysis of their two studies. For example, it is not clear why Dr. Finley includes several direct

quotes from Dr. Edwards' deposition testimony, nor is it clear how Dr. Finley could reasonably rely on such deposition testimony to offer an admissible opinion under Rules 702 and 703. (ECF No. 2928-11, PageID.98806.) VNA's response brief discusses Dr. Gagnon, but it does not explicitly respond to Plaintiffs' arguments about parroting the biosolids study that are specific to Dr. Finley. (*See* ECF No. 3015, PageID.102000–102003.) Based on the record, the Court lacks a basis to exclude Dr. Finley's entire discussion of the BH or the conclusions he arrives at in reliance upon it.

Yet insofar as Dr. Finley—or any expert—plans to regurgitate the opinions of the researchers behind the BH, those opinions are inadmissible at trial. *See In re Flint Water Cases*, 2022 WL 331182, at *3 (denying in part VNA's motion to exclude Dr. John Hoaglund). Experts cannot simply read other people's research or opinions into the record, nor can they testify to endorse others' viewpoints. *In re Welding Fume Prods. Liab. Litig.*, 2010 WL 7699456, at *63. Instead, they can offer their own opinions based on their own expertise and analysis, which may include reference to reliable studies on which “experts in the particular field would reasonably rely.” Fed. R. Evid. 703.

Accordingly, the Court denies Plaintiffs' arguments that there is no permissible way for VNA's experts to present testimony about the BH or "and any and all conclusions derived therefrom." (ECF No. 2928, PageID.98664.)

IV. Conclusion

For the reasons set forth above, the Motion is DENIED, subject to the limitations set forth in Section III.B above.

IT IS SO ORDERED.

Dated: July 22, 2024
Ann Arbor, Michigan

s/Judith E. Levy
JUDITH E. LEVY
United States District Judge

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was served upon counsel of record and any unrepresented parties via the Court's ECF System to their respective email or first-class U.S. mail addresses disclosed on the Notice of Electronic Filing on July 22, 2024.

s/William Barkholz
WILLIAM BARKHOLZ
Case Manager